

RESIN COMPOSITE, METHOD FOR PRODUCING THE SAME AND
ARTICLES CONSISTING OF THE SAME

BACKGROUND OF THE INVENTION

5 Field of the Invention

The present invention relates to a resin composite produced using waste resources, such as used paper and waste molasses, as raw materials and capable of being utilized as a plastic material, a method for producing
10 the same, and articles consisting of the same.

Related Background Art

In Japan, which has not been rich in forest resources, collecting/recycling used paper have been carried out positively and a system has been firmly
15 established in which used newspaper, used corrugated fiberboard and the like are reused as recycled paper. However, for copying paper and printing paper of which consumption has rapidly increased recently as copiers and printers have become in common use by leaps and
20 bounds, the utilization of used paper for their production is low. Furthermore, since recycling of paper is basically carried out stepwise from the higher quality paper downward, there is a limit to the demand of used paper, on the whole, unless the present
25 situation changes. The waste paper tends to increase more and more with the progress toward office automation (OA), and the increase in the excess used

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paper has become one of the current issues related to waste. Accordingly, utilizing used paper by transforming it into something other than recycled paper is very meaningful, in particular, transforming it into a plastic material is desirable because it can have wide applications.

Waste resources, other than used paper, derived from vegetables include, for example, lees produced during the pressing process of sugar manufacturing and brewing and waste molasses left after the refining process of sugar manufacturing. The waste molasses is not always suitable for foods because it contains indigestible saccharides. Some of the compounds obtained by the chemical modification of polysaccharides, which are vegetable polymers as described above, can be plastic materials; however, their properties lack in diversity and there are none known as substitute materials for rubber.

SUMMARY OF THE INVENTION

Accordingly, the primary object of this invention is to provide a resin composite, which can be a useful material having elasticity and flexibility just as does rubber, by making good use of waste vegetable resources such as used paper and waste molasses, a method of producing the above resin composite, and articles consisting of the same.

5 The invention achieving the above object is a resin composite characterized in that it includes: a polymer compound which is an alternating copolymer of a saccharic compound and an aliphatic compound and has a three-dimensional network; and a plasticizer contained in the gap in the three-dimensional network of the above polymer compound.

10 Further, the invention is a method of producing the above resin composite characterized in that it includes: a step of providing a liquid containing a plasticizer; and a step of copolymerizing a saccharic compound and a aliphatic compound in the above liquid.

15 The preferable applications of the above articles include, for example, a shock absorbing medium and a recording medium conveying roller for a printer.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

In the following this invention will be described in detail in terms of its preferred embodiments.

20 When considering how to make good use of used paper, the inventors of this invention noted that cellulose, a main component of paper, and amylose, amylopectin, main components of starch and so forth, are all polymers of glucose, and they finally found
25 that used paper and starch can be transformed into polymer compounds by copolymerizing saccharic compounds (glucose, oligosaccharides, etc.), which are obtained